

EXECUTIVE COMPLIANCE AGREEMENT

**The Rector and Visitors of the University of Virginia
Charlottesville, Virginia
Main Heating Plant**

Registration # 40200

Effective date: Later date of signatories, page 4

Purpose and authority

This is an Executive Compliance Agreement (Agreement) between the University of Virginia (UVA) and the Virginia Department of Environmental Quality (DEQ) pursuant to the Director's authority, as set forth in Sections 10.1-1186(2) and 10.1-1192 of the Code of Virginia, to administer and enforce the Air Pollution Control Law and regulations. The purpose of this Agreement is to address past and present air emissions and throughput limit exceedences of the air permits, identified below, and to allow for pollution control upgrades and modifications of UVA's main heating plant, by establishing interim fuel throughput limits, emissions limits, and recordkeeping requirements during the necessary construction phases, and UVA's submittal of a completed air permit modification.

Laws and regulations

UVA's main heating plant is subject to Title 9, No. 5 of the Virginia Administrative Code. Pursuant to Title 23, Chapter 9 of the Code of Virginia, the Rector and Visitors of UVA are vested with the authority and responsibility to govern UVA. Nothing in this Agreement shall operate to limit such authority of the Rector and Visitors or otherwise violate the laws of the Commonwealth.

Specific Conditions #4 through #9, #11 and #20 of Part I of UVA's permit to construct, modify and operate, effective August 5, 1994, as amended March 9, 1995, (1994 permit) provide the applicable emissions/fuel throughput limitations for UVA's Main Heating Plant. Specific Condition #4

describes the fuel allowance for coal for each boiler and the total combined heat input allowance (Btu).

Furthermore, Specific Conditions #4 and #5 of Part I of UVA's permit to construct and operate coal handling, unloading and storage facilities (1986 coal handling permit or CHP), effective February 14, 1986, set the coal throughput limitation at the facility's coal handling facility. All of the terms and conditions of both permits, except as modified by Appendix A, shall continue in effect subsequent to the execution of this Agreement, until execution of a new permit, where the new terms and conditions shall apply.

Compliance and enforcement history

UVA's main heating plant on Jefferson Park Avenue operates two coal-fired boilers (boilers #1 and #3), two coal/gas-fired boilers (boilers #2R and #5), and one oil/gas-fired boiler (boiler #4). In accordance with Specific Condition #16 of the 1994 permit, a continuous emission monitor system (CEMS) has been installed to measure and record the opacity from the boiler exhaust stack. In addition, a CEMS has been installed to measure and record the concentration of NO_x emitted from the exhaust stack of boilers #5 and #2R, in accordance with Part I Specific Condition #17 of the 1994 permit.

In 1993, DEQ issued a Notice of Violation (NOV) to UVA for late and allegedly deficient CEMS reports, failure to submit quarterly emissions reports, and for fuel use exceedences on boilers #1, #3, and #4 that occurred in 1992. A Consent Order (CO) intended to resolve the allegations on the 1993 NOV was entered into by UVA and DEQ and was terminated on June 30, 1998.

In 1995, DEQ issued a second NOV to UVA for allegedly deficient excess emissions reports, coal fuel use exceedence on boiler #3 and failure to provide minimum valid capture data for NO_x emissions on boiler #2R. Also in 1995, DEQ issued a Letter of Admonition for failing to meet the deadline for completing the CEMs unit replacement. A CO intended to resolve the allegations in the 1995 NOV was entered into by UVA and DEQ and was terminated on March 14, 1996.

In 1996, DEQ issued a third NOV to UVA for exceeding the sulfur content for residual oil burned in the #4 boiler, exceeding the percentage ash content of a shipment of coal burned at the facility in 1995, exceeding the coal throughput limitation at the truck unloading station in 1995, and exceeding the fuel allowance for coal burned as well as the total combined heat input allowance for boiler #5. Specifically, UVA was alleged to be exceeding throughput and emissions limits as set out in Part I Specific Condition #4 of the 1994 Permit and Part I Specific Condition #5 of the 1986 CHP.

A Consent Order intended to address the 1996 NOV was entered into between DEQ and UVA effective December 13, 1996, that required the completion of supplemental environmental projects (SEPs) and the submittal of a revised PSD permit application. UVA submitted a PSD air permit application dated September 10, 1996, which was subsequently cancelled by the submittal of a

new PSD air permit application dated October 25, 2001. In May 2002, UVA embarked on an update of its heating master plan, which included an evaluation of technically feasible pollution control equipment for its existing boilers. As a result of that effort, UVA submitted a third air permit application dated March 31, 2003. UVA completed the SEPs as required by the 1996 Consent Order and submission of an air permit modification application is still pending final DEQ approval as of June 17, 2003.

On January 29, 2003, DEQ issued a fourth NOV to UVA for three alleged violations of the State Air Pollution Control Law and regulations for certain events occurring at UVA's main heating plant on January 15 through January 17, 2003:

1. Data from the main heating plant's CEMS indicated that on January 15, 2003, there occurred an opacity exceedence of 48.1% for a 1 ½ -hour duration during startup/shutdown procedures stemming from the startup of the facility's Boiler #3. UVA failed to notify DEQ of the opacity exceedence within four business hours, in apparent violation of section 9 VAC 5-20-180.C.
2. Data from the main heating plant's CEMS indicated that on January 16, 2003, there were two hours and six minutes (8:00 p.m. through 10:06 p.m.) of excess opacity with an average magnitude of 71.9%, which was not attributable to startup, shutdown, or malfunction. The opacity readings were in excess of the permitted standards set out in sections 9 VAC 5-40-80 and 5-40-940.B. Contemporaneous with this event, there was a major downwash of coal soot upon a portion of the City of Charlottesville in the immediate vicinity of UVA's main boiler facility. This resulted in part from the operation of the main heating plant under unusual emergency conditions.
3. Data from the main heating plant's CEMS indicated that on January 16, 2003, there began four hours and twenty-four minutes (10:12 p.m. on January 16, 2003 through 2:36 a.m. on January 17, 2003) of excess opacity with an average magnitude of 33.3%, which was also not attributable to startup, shutdown, or malfunction. The opacity readings were in excess of the permitted standards set out in sections 9 VAC 5-40-80 and 5-40-940.B. This was caused in part from the same emergency.

The emergency that resulted in the alleged violations on January 15 through January 17, 2003 was caused by the consecutive failures of Boilers # 2r and 5, the main heating plant's two newest and largest boilers. To protect patient care at the University Hospital, UVA took the following mitigating steps during this period to immediately repair a failed tube and to shed load from its main heating plant:

1. UVA contacted a vendor to make emergency repairs. The vendor mobilized his crew and was at the plant (coming from Richmond during a night time snow event) within three hours of the call.
2. UVA shut off heat to certain buildings and shut down air handling units in buildings that could be controlled remotely. Opacity declined significantly within 1½ hours of this action

being initiated.

3. For those buildings and systems that could not be remotely controlled, UVA mobilized crews in UVA's Health System and Academic areas to manually shut down heat to larger buildings and manually shut down air handling units and converters.
4. UVA reduced heating hot water distribution temperature by 22%.

To remedy the alleged violations contained in the January 29, 2003 NOV, as well to resolve the pending actions from the third NOV, UVA agrees to undertake the actions and schedule of compliance set out in Appendix A of this Agreement. Acceptance of this Agreement shall terminate the Consent Order issued to UVA on December 13, 1996. Termination provisions are set out in Section D of Appendix A, below.

This Agreement and Appendix A shall become effective upon the date of its execution by the Director of the Department of Environmental Quality or his designee.

Leonard W. Sandridge,
Executive Vice President and
Chief Operating Officer,
The University of Virginia

Date

Robert Burnley, Director
Va. Department of Environmental Quality

Date

APPENDIX A

A) UVA agrees to the following corrective actions to address certain violations specified in the NOV issued on January 29, 2003:

1. UVA shall keep a notice posted in the main heating plant control room providing instructions to operators to contact DEQ via facsimile whenever opacity exceeds 20% or more for over an hour even if occurring during startup, shutdown, or malfunction. Furthermore, the notice shall provide that DEQ shall be contacted any time opacity exceeds 60% for a six-minute average (when boilers 1, 3 and 4 are operating by themselves) or any time opacity exceeds 27% when boiler 5 is operating by itself or in conjunction with any other boiler, or any time opacity exceeds 30% when boiler 2R is operating by itself or in conjunction with boilers 1, 3, or 4. Startup and shutdown exemptions are only allowable during periods that boilers 2R and 5 are operating without boilers 1, 3 and 4. To facilitate the reporting requirements, UVA will track the specific boilers operating at any point in time and indicated this information in any required reports indicating status of emissions. Shift operators shall check the CEMS and the logbook at the beginning of each shift to ensure that proper notifications have been made to DEQ, if necessary. UVA shall train all boiler operators to follow this procedure.
2. UVA has added appropriate alarms and instructions to UVA's CEMS software, including the requirement to indicate which boilers are burning fuel at the time of the exceedence.

B) UVA agrees to the following schedule of compliance to address the planned upgrades and boiler modifications of the main heating plant:

1. UVA shall utilize natural gas as needed to ensure that emissions limits are not exceeded during any 12-month period on a rolling basis.
2. UVA shall complete an air quality analysis demonstrating compliance with applicable NAAQS and report preliminary results no later than 60 days from the effective date of this Agreement. Protocol for the modeling shall be submitted to DEQ for approval no later than 30 days after the effective date of this Agreement.
3. UVA shall comply with interim fuel throughput limits, emissions limits, and recordkeeping requirements as set out in Section C, below, during the design and construction phases as set out in this schedule. As new and modified equipment comes online, UVA and DEQ agree to reevaluate these limits and amend this Agreement as appropriate. These interim limits and reporting requirements shall replace the language in Part I Specific Conditions #4 through #9, #11, and #20 of the 1994 permit, as amended March 9, 1995, and in Part I

Specific Conditions #4 and #5 of the 1986 CHP. All other permit Conditions and requirements shall continue to apply unless otherwise stated herein.

4. **Boiler modification and construction of air pollution controls, schedule incorporated by reference.** UVA has submitted a Form 7, with supporting documentation. The terms and conditions of the Form 7 application are incorporated herein by reference.

C) UVA agrees to the following interim operating scenario and interim fuel throughput limits during construction and upgrades to the main heating plant:

(Note: These interim limitations correspond to Part I Specific Conditions #4 through #9, #11 and #20 of the August 5, 1994 permit, as amended March 9, 1995, and Part I Specific Conditions #4 and #5 of the 1986 CHP)

1. Each boiler (including existing units) shall consume no more than the following amounts of fuel on an annual basis:

Boiler Number	Approved Fuel Type	Quantity Allowed
1 ⁽¹⁾	Coal	0 tons/yr
2R & 5 ⁽²⁾	Coal	24,000 tons/yr
	Natural Gas	1,444 x 10 ⁶ SCF
3 ⁽³⁾	Coal	4,515 tons/yr
4	#6 Oil	70,150 gallons
	Natural Gas	150.0 x 10 ⁶ SCF

- (1) Boiler #1 shall remain off-line, with the former total allowable limit of 515 tons coal/yr now assigned Boiler #3 for a total 4,515 tons/yr. Boiler #1 may be used in emergency situations only, with emissions and throughput effects deducted from allowables to Boiler #3 in these circumstances.
 - (2) The combination of coal and natural gas burned in Boilers #2R and #5 shall not to exceed 1.516x10¹² Btu/year.
 - (3) Any of the coal assigned to Boiler #3 and not used in that boiler may be reassigned to Boilers #2R and/or #5. See also subpart C)4 below.
2. The initial 12-month period begins the first full month following the effective date of this Agreement. Following the initial 12-month period, annual throughputs shall be calculated as the sum of each consecutive 12-month period on a rolling basis.
 3. Short-term emissions from the operation of each boiler shall not exceed the limits specified below:

	PM	SO₂	NO_x	CO	VOC
1⁽¹⁾	0.00 lbs/MMBtu	0.00 lbs/MMBtu	0.00 lbs/MMBtu	0.00 lbs/MMBtu	N/A
	0.00 lbs/hr	0.00 lbs/hr	0.00 lbs/hr	0.00 lbs/hr	0.00 lbs/hr
2R	0.05 lbs/MMBtu	1.64 lbs/MMBtu	0.60 lbs/MMBtu	0.19 lbs/MMBtu	N/A
	4.75 lbs/hr	155.94 lbs/hr	57.00 lbs/hr	18.25 lbs/hr	0.52 lbs/hr
3	0.45 lbs/MMBtu	1.64 lbs/MMBtu	0.60 lbs/MMBtu	0.19 lbs/MMBtu	N/A
	40.56 lbs/hr	147.64 lbs/hr	53.94 lbs/hr	16.90 lbs/hr	0.24 lbs/hr
4	0.14 lbs/MMBtu	2.09 lbs/MMBtu	0.52 lbs/MMBtu	0.04 lbs/MMBtu	N/A
	15.80 lbs/hr	235.10 lbs/hr	58.50 lbs/hr	4.50 lbs/hr	0.59 lbs/hr
5	0.05 lbs/MMBtu	1.64 lbs/MMBtu	0.60 lbs/MMBtu ⁽²⁾	0.19 lbs/MMBtu	N/A
	5.63 lbs/hr	184.77 lbs/hr	0.20 lbs/MMBtu ⁽³⁾ 67.51 lbs/hr	21.15 lbs/hr	0.59 lbs/hr

- (1) Boiler #1 shall remain off-line, except under emergency conditions as indicated in #1, footnote #1, above.
- (2) Coal emission limit.
- (3) Natural gas emission limit.

4. Annual emissions from the operation of the boilers shall not exceed the limitations specified below:

	PM	SO₂	NO_x	CO	VOC
1⁽¹⁾	0.00 tons/yr	0.00 tons/yr	0.00 tons/yr	0.00 tons/yr	0.00 tons/yr
2R&5	15.96 tons/yr	523.49 tons/yr	191.52 tons/yr	60.65 tons/yr	3.97 tons/yr
3⁽²⁾	27.02 tons/yr	98.48 tons/yr	36.03 tons/yr	11.41 tons/yr	0.11 tons/yr
4	1.31 tons/yr	11.05 tons/yr	23.74 tons/yr	6.51 tons/yr	0.42 tons/yr

- (1) Boiler #1 will remain off-line, except under emergency conditions as indicated in #1, footnote #1, above.
- (2) Any coal reallocated from Boiler #3 to Boilers #2R and/or #5 shall not result in exceedence of the combined totals of each pollutant listed above for Boilers #2R, 3, and 5.

5. The initial 12-month period begins the first full month following the effective date of this Agreement. Following the initial 12-month period, annual emissions shall be calculated as the sum of each consecutive 12-month period on a rolling basis.
6. UVA shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this Agreement. The content and format of such records shall be provided to the Director, Valley Regional Office, no later than 60 days after the effective date of this Agreement. These records shall be available for inspection by the DEQ and shall be available for the duration of this Agreement. Annual emissions shall be calculated according to the requirements contained within this Agreement.

7. This scenario shall be implemented beginning on the effective date of this Agreement and shall terminate no later than April 2008, or earlier at DEQ's discretion if a DEQ-approved phasing-in plan is adopted, whereupon the new permit conditions shall apply.
8. UVA and DEQ shall follow DEQ's notification policy as set out in DEQ's "Policy on Excess Opacity During Startup and Shutdown Events at Existing Units" memo regarding enforcement discretion, dated April 2, 2003, and Part III of the March 20, 2003 revision of DEQ's Field Operations Manual for Air Inspectors (ASOP-3), in the event that an opacity exceedance is detected during the startup or shutdown of existing Boilers #1, 3, or 4.

D) Administrative provisions

1. If UVA's revised permit application is either denied by any authority, not submitted by UVA, or not acted upon by DEQ by March 31, 2004, then this Agreement will immediately terminate.
2. This agreement may not be modified or amended without written consent of both parties. The parties agree to consult in good faith as conditions may require. The purpose of this provision is to recognize that this is a process-based schedule spanning several years that may require occasional adjustments based on unforeseen and unforeseeable future events. Alteration of the Form 7 schedule shall not invalidate other provisions in this Agreement.
3. The inability of UVA to meet a scheduled deadline shall not result in the automatic termination of this Agreement, excluding D.1 above. A discussion between DEQ and UVA shall be held at the earliest practicable date when a delay has occurred or is expected to occur in order to discuss compliance issues, revising the schedule, future schedule deadlines, and the possible termination of this Agreement.
4. DEQ and UVA understand and agree that, unless provided herein, this Agreement does not alter, modify, or amend any other existing permit term or condition.
5. In addition to the reporting requirements as set out in subsection C.6 above, UVA shall submit quarterly progress reports.
6. UVA shall schedule a progress review meeting with DEQ at least annually to evaluate current progress, discuss scheduled deadlines for the forthcoming year, and determine whether amendment to this Agreement is necessary.
7. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of NOV's or ECAs as appropriate by the State Air Pollution Control Board as a result of

violations.

8. Nothing herein shall affect any appropriate enforcement actions by any other federal, state, or local regulatory authority.
9. This Agreement shall terminate upon the implementation of the applicable terms and conditions of the new permit or pursuant to the terms of D.1, above. Determination of any shake-down period following completion of construction shall be made within ten days of completion of such construction, upon consultation of both parties to this Agreement.